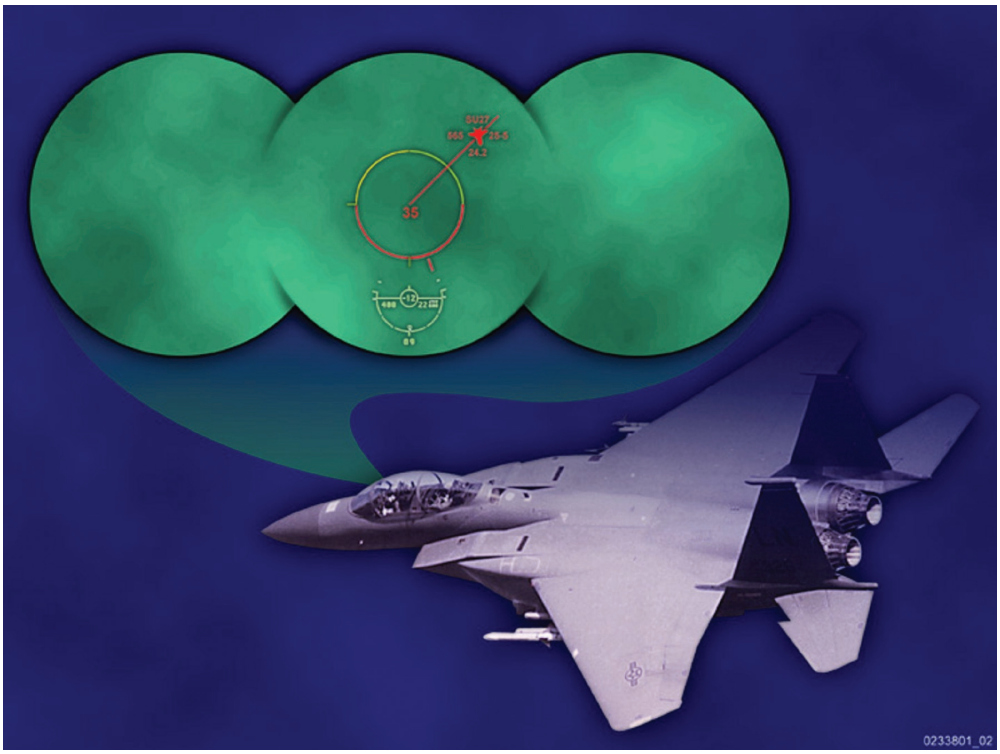
Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

NON-DISTRIBUTED FLIGHT REFERENCE OFF-BORESIGHT SYMBOLOGY ADVANCES



Off-boresight attitude symbology improves the warfighter's situation awareness of aircraft attitude when performing off-boresight tasks such as air-to-air or air-to-ground maneuvers.

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Accomplishment

The Human Effectiveness Directorate's Visual Display Systems Branch developed a small footprint off-boresight attitude symbology called Non-Distributed Flight Reference (NDFR). The NDFR allows pilots to keep their attention out of the cockpit during tactical engagements and still maintain situation awareness of their attitude, thus yielding tactical and safety advantages. The directorate demonstrated the capabilities of the NDFR to a group of pilots at a technical information meeting and adopted it as the off-boresight attitude symbology for the Strike Helmet 21 program.

Background

The development of off-boresight attitude symbology was an ongoing project within the directorate's Visual Display Systems Branch. Researchers modified NDFR by a series of in-house experiments. Each of these experiments compared NDFR to other off-boresight displays in various operationally representative tasks. In all cases, NDFR proved to give pilots the best situation awareness of their aircraft state.

Directorate engineers performed operational testing to assess the utility of NDFR in a variety of tasks including unusual attitude recovery, and air-to-air and air-to-ground maneuvers. In all three cases, NDFR proved most effective for giving pilots attitude awareness, allowing them to spend more time outside the cockpit to perform their given tasks.

Human Effectiveness
Support to the Warfighter

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (03-HE-09)